THE DETAILS OF SECOND OFFICE ACTION

The present application relates to an intrinsically safe field maintenance tool with power islands. Through examination, the detailed opinions are provided as follows.

CLAIM REJECTIONS

1. Claim 1 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

A hand held configuration for coupling to a two wire process control loop for use in configuring and monitoring field units coupled to two wire process control loop is claimed for protection by the independent claim 1. The cited reference 1 (US 5412312A) has disclosed a frequency and instantaneous voltage level meter with the following technical features (see the specification and Fig. 2 of the cited reference 1). Specifically, the frequency and instantaneous voltage level meter comprises: a power supply 41(corresponding to the power of the claim 1); negative and positive input terminals 26, 27 (corresponding to the loop coupling circuitry to couple to the two wire process control loop of the cited reference 1);the power islands formed by two electric elements connected to terminal (27) through conducting line and the resistor (51), another power island formed by two electric elements connected to terminal (26) through conducting line and the resistor (52) (corresponding to at least two power islands, each power island configured to limit energy transfer between powered electrical components ...the powered electrical components configured to operate in response to power from the power supply); the path of the terminal (26 and 27) to the power supply (41) (corresponding to independed power connections between each power island and the power supply to provide power to the powered electrical components),

As apparent from the above, the cited reference 1 has disclosed all the technical features of claim 1. Further, the cited reference 1 and claim 1 relate to the same field and adopt the same technical scheme while producing the same technical effect. Therefore, claim 1 does not possess novelty over the cited references, which is not in conformity with Article 22(2) of the Chinese Patent Law being quoted below.

Article 22(2). Novelty means that, before the date of filing, no identical invention or utility model has been publicly disclosed in publications in the country or abroad or has been publicly used or made known to the public by any other means in the country, nor has any other person filed previously with the Patent Administration Department Under the State Council an application which described the identical invention or utility model and

was published after the said date of filing.

2. Claim 2 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 2 further defines claim 1 with additional technical features that the current limiter in at least one power connection to limit current supplied to a power island. However, the above additional technical features have been disclosed by the cited reference 1 (see column 3, lines 43-63 and Fig. 2 of the cited reference 1). The power supply 41 is provided with integrated circuit regulator 42, wherein the input terminal thereof is connected to a battery 43, the output terminal thereof is grounded through a diode and a potentiometer.

Therefore, while claim 1 to which it recites does not possess novelty, claim 2 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

3. Claim 3 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 3 further defines claim 1 with additional technical feature that the configurator further includes a voltage limiter coupled to at least one power connection to limit voltage applied to the power island. However, the above additional technical features have been disclosed by the cited reference 1 (see column 3, lines 43-63 and Fig. 2 of the cited reference 1). The power supply 41 is provided with integrated circuit regulator 42, wherein the input terminal thereof is connected to a battery 43, the output terminal thereof is grounded through a diode and a potentiometer.

Therefore, while claim 1 to which it recites does not possess novelty, claim 3 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

4. Claim 4 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 4 further defines claim 1 with additional technical feature that at least one of the power islands includes a power island therein which is separated by a desired spacing distance and coupled to through at least one series resistor. However, the above additional technical features have been disclosed by the cited reference 1 (see column 3, line 64 to column 4, line 17 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a resistor 52 connected between the input terminals 26, 27, a resistor 51 and IC regulator 42 connected in series to the input terminal 27 and connectors connected to the above components.

Therefore, while claim 1 to which it recites does not possess novelty, claim 4 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

5. Claim 5 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 5 further defines claim 1 with additional technical feature that the current limiter comprises an active component. However, the above additional technical features have been disclosed by the cited reference 1 (see Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses an IC regulator 42 which is an active component which requires a power supply.

Therefore, while claim 1 to which it recites does not possess novelty, claim 5 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

6. Claim 6 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 6 further defines claim 2 with additional technical feature that the current limiter comprises a passive component. However, the above additional technical features have been disclosed by the cited reference 1 (see Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a potentiometer which is a passive component which needs not power supply.

Therefore, while claim 2 to which it recites does not possess novelty, claim 6 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

7. Claims 7 and 8 are not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claims 7 and 8 further defines claim 3 with additional technical feature that the current limiter comprises an active and a passive component, respectively. However, the above additional technical features have been disclosed by the cited reference 1 (see Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses an IC regulator 42 which is an active component which requires a power supply, and a potentiometer 47 which is a passive component which needs not power supply.

Therefore, while claim 3 to which it recites does not possess novelty, claims 7 and 8 do not possess novelty over the cited reference 1 either, which is not in conformity with Article

22(2) of the Chinese Patent Law.

8. Claim 9 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 9 further defines claim 1 with additional technical feature that at least one power island includes voltage step up circuitry to increase a voltage level within the power island. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 5, lines 7-21 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses an IC comparator 76 to increase a voltage level within the power island.

Therefore, while claim 1 to which it recites does not possess novelty, claim 9 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

9. Claim 10 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 10 further defines claim 1 with additional technical feature that the power supply comprises a battery. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 5, lines 7-21 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a battery 43 which supplies +v voltage to other components f the circuitry 40.

Therefore, while claim 1 to which it recites does not possess novelty, claim 10 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

10. Claim 11 is not in conformity with Article 22(3) of the Chinese Patent Law for lack of inventiveness.

Claim 11 further defines claim 1 with additional technical feature that the power supplied to a power island is disconnected if the power draw of the power island exceeds a limit. The cited reference 2 (US 4749934A) relates to a thermosensitive switch 40 which is connected with the battery 36 in series. When the current in the circuit exceeds a threshold value, the thermosensitive switch 40 is disconnected so as to open the circuit. That is, the thermosensitive switch 40 functions to prevent occurrence of excessive current which causes damage to the entire circuit. Accordingly, the above technical features bring forth substantially the same function as that of claim 11. In other words, the cited reference 2 has given teachings for those skilled in the art that the above technical feature of the reference 2 can be incorporated into the reference 1.

Accordingly, it is obvious for those skilled in the art to obtain the technical solution of claim 11 by combining the technical features disclosed in the cited reference 1 with those of the cited reference 2. Therefore, claim 11 does not have prominent substantive features and represent a notable progress over the cited references. This is not in conformity with Article 22(3) of the Chinese Patent Law being quoted below.

Article 22(3). Inventiveness means that, as compared with the technology existing before the date of filing, the invention has prominent substantive features and represents a notable progress and that the utility model has substantive features and represents progress.

11. Claim 12 is not in conformity with Article 22(3) of the Chinese Patent Law for lack of inventiveness.

Claim 12 further defines claim 1 with additional technical feature that at least one power island includes a microprocessor. The cited reference 3 (US 4825392A) relates to a digital voltage meter having a microprocessor 14 (see column 4, lines 25-26 and Fig. 1 of the cited reference 3). The microprocessor 14 functions to process the collected signals. As apparent from the above, the microprocessor 14 brings forth substantially the same function as that of claim 12. That is, the cited reference 3 has given the teachings or suggestions that the microprocessor 14 of the cited reference 3 can be incorporated into the cited reference 1 so as to obtain the technical solution of claim 12.

Accordingly, it is obvious for those skilled in the art to obtain the technical solution of claim 12 by combining the technical features disclosed in the cited reference 1 with those of the cited reference 3. Therefore, claim 12 does not have prominent substantive features and represent a notable progress over the cited references, which is not in conformity with Article 22(3) of the Chinese Patent Law.

12. Claim 13 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 13 further defines claim 1 with additional technical feature that at least one power island includes loop input/output circuit for coupling to the two-wire process control loop. However, the above additional technical features have been disclosed by the cited reference 1 (see Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a negative input terminal 26 and a positive input terminal 27 and the surrounding circuits.

Therefore, while claim 1 to which it recites does not possess novelty, claim 13 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

13. Claim 14 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 14 further defines claim 1 with additional technical feature that at least one power island includes a display driver. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 3, lines 27-42, Column 4, line 56 to Column 5, line 21 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a driving circuit 30 so as to display the measurements.

Therefore, while claim 1 to which it recites does not possess novelty, claim 14 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

14. Claim 15 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 15 further defines claim 1 with additional technical feature that at least one power island includes keyboard circuitry. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 4, lines 56-62 and Fig. 3 of the cited reference 1). Specifically, the cited reference 1 discloses a press button switch 29 by which the user can select to observe the preset voltage.

Therefore, while claim 1 to which it recites does not possess novelty, claim 15 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

15. Claim 16 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 16 further defines claim 1 with additional technical feature that at least one power island includes battery management circuitry. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 3, lines 43-63 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a power supply circuit 41 which manages the transformation of power and safety management.

Therefore, while claim 1 to which it recites does not possess novelty, claim 16 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

16. Claim 17 is not in conformity with Article 22(2) of the Chinese Patent Law for lack of novelty.

Claim 17 further defines claim 1 with additional technical feature that the power islands are coupled to ground through electrical connections configured to carry a desired maximum current level. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 3, lines 43-63 and Fig. 2 of the cited reference 1). Specifically, as shown in Fig.2 of the cited reference 1, the negative input terminal 26 is grounded.

Therefore, while claim 1 to which it recites does not possess novelty, claim 17 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

17. Claim 18 is not in conformity with Article 22(3) of the Chinese Patent Law for lack of inventiveness.

Claim 18 further defines claim 1 with additional technical feature that a maximum power level supplied to each power island is 1.3 watts. As shown in Fig. 2 of the cited reference 1, the negative input terminal 27 is connected to the operation magnifier through a resistor 51 and the power consumption after passing through the operation magnifier is neglectable. Further, the maximum power level of 1.3 watts can be determined based on the actual designing of the circuit, and this designing work is a routine job for those skilled in the art.

Therefore, while claim 1 to which it recites does not possess novelty over the cited references, claim 18 does not have prominent substantive features and represent a notable progress over the cited references, which is not in conformity with Article 22(3) of the Chinese Patent Law.

18. Claim 19 is not in conformity with Article 22(3) of the Chinese Patent Law for lack of inventiveness.

Claim 19 further defines claim 1 with additional technical feature that the apparatus further includes a barrier diode electrically connecting two power islands which operate at differing voltage level. However, the above additional technical features have been disclosed by the cited reference 1 (see column 3, lines 55-63 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 has discloses a diode 45, which restricts a current flowing in the regulator 42 when a reverse voltage is applied.

Further, it is a routine technique for those skilled in the art either an ordinary or a gate diode can be used so as to solve the technical problem of the invention. Therefore, while claim 1 to which it recites does not possess novelty over the cited references, claim 19 does not have prominent substantive features and represent a notable progress over the cited references, which is not in conformity with Article 22(3) of the Chinese Patent Law.

19. Claim 20 is not in conformity with Article 22(2) of the Chinese Patent Law for lack

of novelty.

Claim 20 further defines claim 1 with additional technical feature that driver and/or level shifter circuits coupled to the series resistors are located in close proximity to borders of the power islands to thereby reduce capacitance in a signal pass therebetween. However, the above additional technical features have been disclosed by the cited reference 1 (see Column 3, lines 55-63 and Fig. 2 of the cited reference 1). Specifically, the cited reference 1 discloses a display drive circuit 30 which is located in close proximity to the power island.

Therefore, while claim 1 to which it recites does not possess novelty, claim 20 does not possess novelty over the cited reference 1 either, which is not in conformity with Article 22(2) of the Chinese Patent Law.

20. The claim 21 does not possess the novelty and is not in conformity with the Article 22(2) of the Chinese Patent Law.

The claim 21 makes the further limitation to the claim 1 and the additional technical features thereof had been disclosed by the reference 1 (referencing the fig 2 of the reference 1), therefore the claim 21 does not possess the novelty and is not in conformity with the Article 22(2) of the Chinese Patent Law.

CONCLUSIONS

Concerning the above, the independent claim 1 and the dependent claims 2-20 do not possess novelty or inventiveness over the cited reference 1. Further, the present application does not contain any substantive matters for which the present application shall be granted. Therefore, the present application is not likely to be granted even if the applicant recombines claims or makes further limitation to the above claims in accordance with the specification. The applicant should expound sufficient reasons for which the present application possesses inventiveness over the cited reference in the designated period of this Office Action; otherwise, the present application will be rejected.